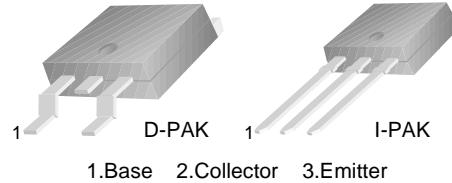


## KSH127

### D-PAK for Surface Mount Applications

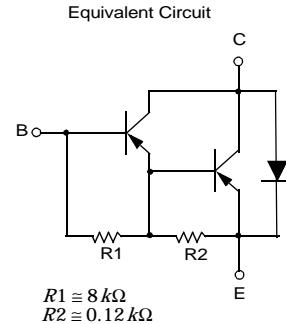
- High DC Current Gain
- Built-in a Damper Diode at E-C
- Lead Formed for Surface Mount Applications (No Suffix)
- Straight Lead (I-PAK, " - I " Suffix)
- Electrically Similar to Popular TIP127
- Complement to KSH122



### PNP Silicon Darlington Transistor

#### Absolute Maximum Ratings $T_C=25^\circ\text{C}$ unless otherwise noted

| Symbol    | Parameter  | Value      | Units |
|-----------|--|------------|-------|
| $V_{CBO}$ | Collector-Base Voltage                           | - 100      | V     |
| $V_{CEO}$ | Collector-Emitter Voltage                        | - 100      | V     |
| $V_{EBO}$ | Emitter-Base Voltage                             | - 5        | V     |
| $I_C$     | Collector Current (DC)                           | - 8        | A     |
| $I_{CP}$  | Collector Current (Pulse)                        | - 16       | A     |
| $I_B$     | Base Current                                     | - 120      | mA    |
| $P_C$     | Collector Dissipation ( $T_C=25^\circ\text{C}$ ) | 20         | W     |
|           | Collector Dissipation ( $T_a=25^\circ\text{C}$ ) | 1.75       | W     |
| $T_J$     | Junction Temperature                             | 150        | °C    |
| $T_{STG}$ | Storage Temperature                              | - 65 ~ 150 | °C    |



#### Electrical Characteristics $T_C=25^\circ\text{C}$ unless otherwise noted

| Symbol                | Parameter                             | Test Condition  | Min.        | Max.       | Units         |
|-----------------------|---------------------------------------|---|-------------|------------|---------------|
| $V_{CEO(\text{sus})}$ | *Collector-Emitter Sustaining Voltage | $I_C = - 30\text{mA}$ , $I_B = 0$   | - 100       |            | V             |
| $I_{CEO}$             | Collector Cut-off Current             | $V_{CE} = - 50\text{V}$ , $I_B = 0$   |             | - 10       | $\mu\text{A}$ |
| $I_{CBO}$             | Collector Cut-off Current             | $V_{CB} = - 100\text{V}$ , $I_E = 0$  |             | - 10       | $\mu\text{A}$ |
| $I_{EBO}$             | Emitter Cut-off Current               | $V_{EB} = - 5\text{V}$ , $I_C = 0$  |             | - 2        | mA            |
| $h_{FE}$              | *DC Current Gain                      | $V_{CE} = - 4\text{V}$ , $I_C = - 4\text{A}$<br>$V_{CE} = - 4\text{V}$ , $V_{EB} = - 8\text{A}$ | 1000<br>100 | 12K        |               |
| $V_{CE(\text{sat})}$  | *Collector-Emitter Saturation Voltage | $I_C = - 4\text{A}$ , $I_B = - 16\text{mA}$<br>$I_C = - 8\text{A}$ , $I_B = - 80\text{mA}$      |             | - 2<br>- 4 | V             |
| $V_{BE(\text{sat})}$  | *Base-Emitter Saturation Voltage      | $I_C = - 8\text{A}$ , $I_B = - 80\text{mA}$   |             | - 4.5      | V             |
| $V_{BE(\text{on})}$   | *Base-Emitter On Voltage              | $V_{CE} = - 4\text{V}$ , $I_C = - 4\text{A}$  |             | - 2.8      | V             |
| $C_{ob}$              | Output Capacitance                    | $V_{CB} = - 10\text{V}$ , $I_E = 0$<br>$f = 0.1\text{MHz}$                                      |             | 300        | pF            |

\* Pulse Test:  $PW \leq 300\mu\text{s}$ , Duty Cycle  $\leq 2\%$

## Typical Characteristics

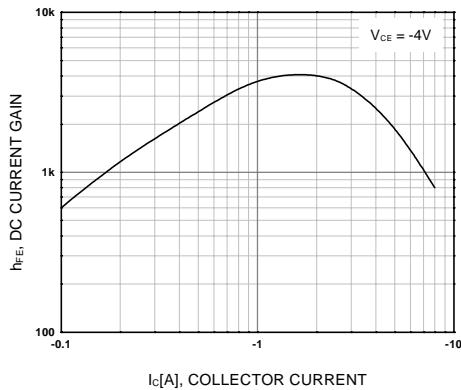


Figure 1. DC current Gain

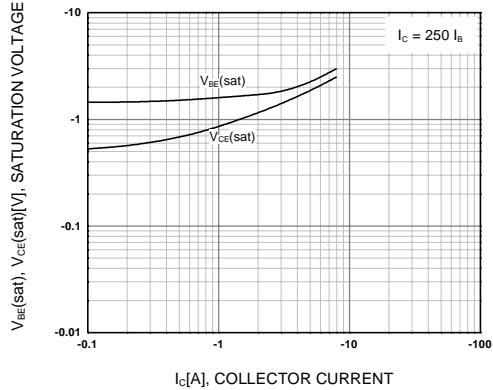


Figure 2. Base-Emitter Saturation Voltage  
Collector-Emitter Saturation Voltage

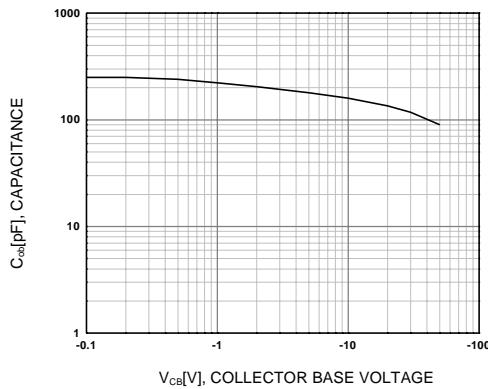


Figure 3. Collector Output Capacitance

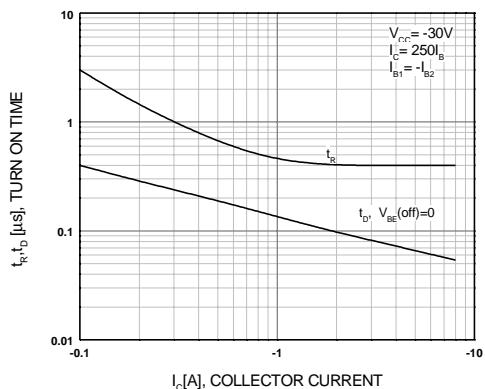


Figure 4. Turn On Time

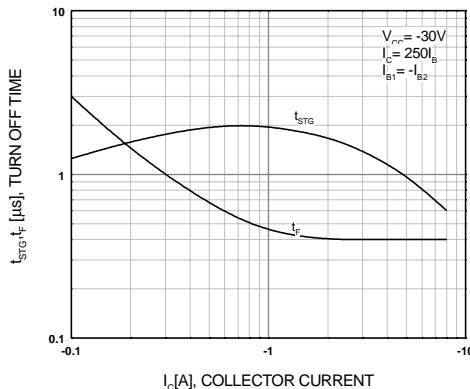


Figure 5. Turn Off Time

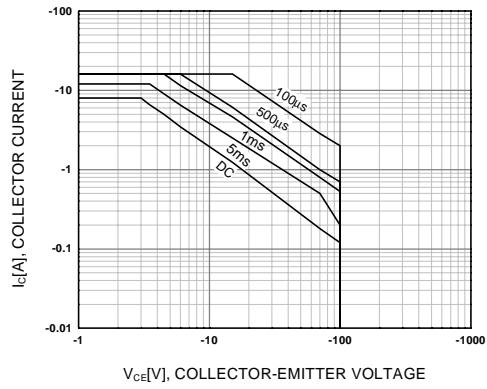
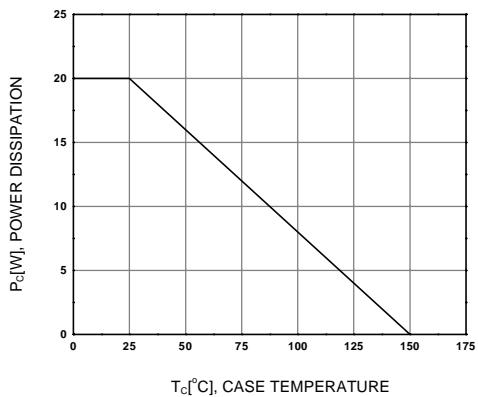


Figure 6. Safe Operating Area

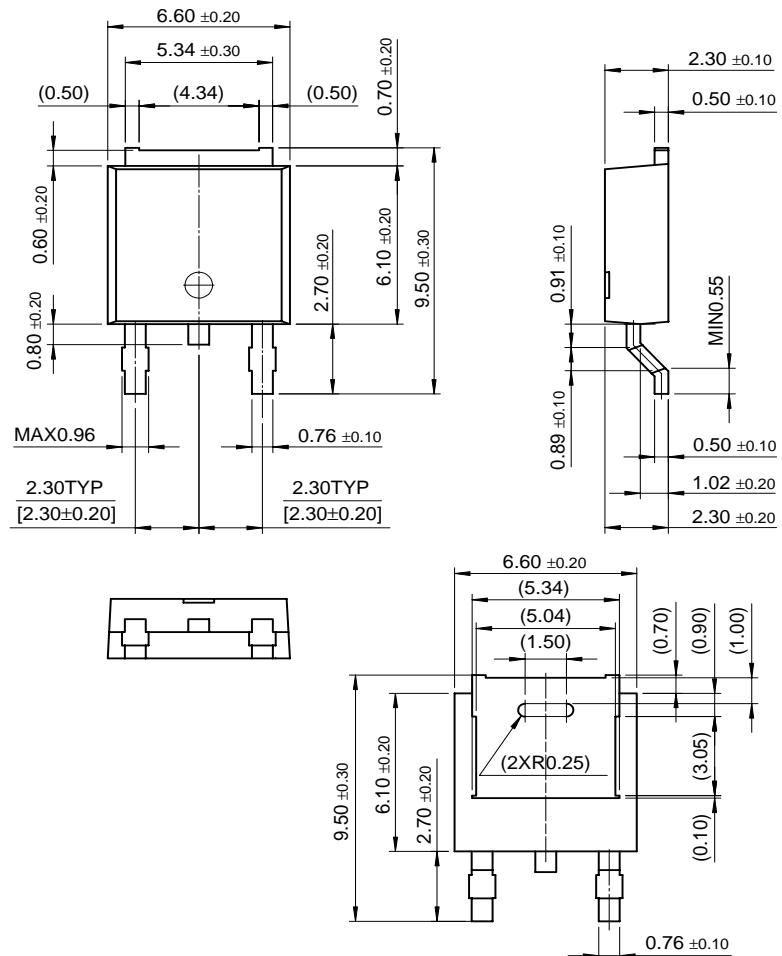
## Typical Characteristic (Continued)



**Figure 7. Power Derating**

## Package Dimensions

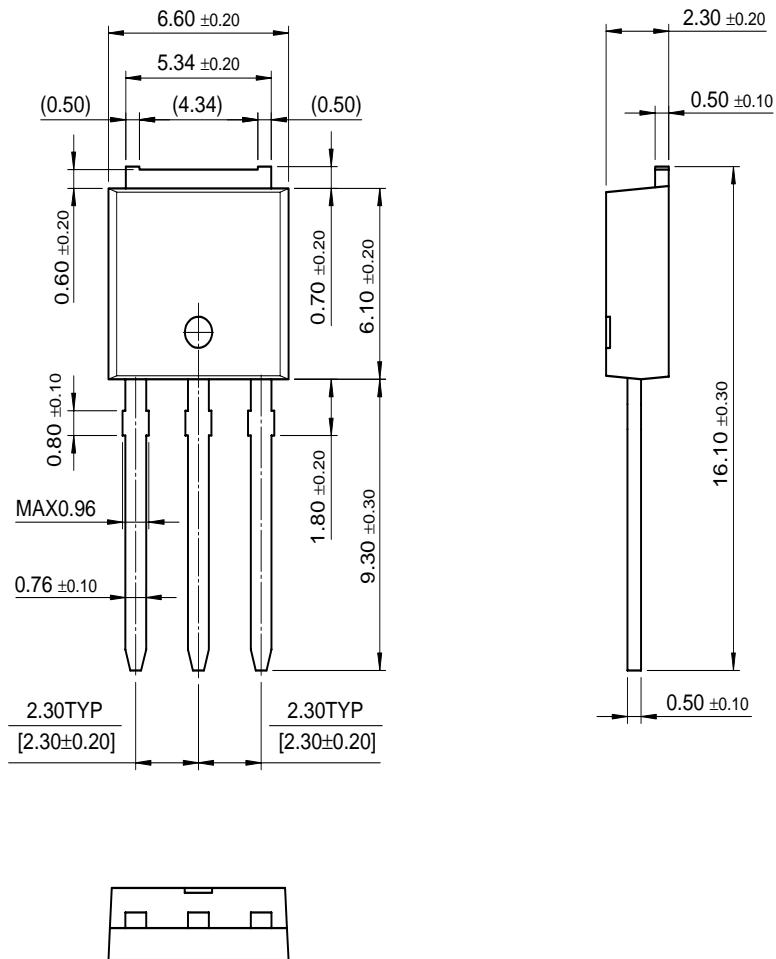
## D-PAK



Dimensions in Millimeters

## Package Dimensions (Continued)

### I-PAK



Dimensions in Millimeters

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| ActiveArray™                         | FACT Quiet series™  | ISOPLANAR™         | POP™                | Stealth™        |
| Bottomless™                          | FAST®               | LittleFET™         | Power247™           | SuperSOT™-3     |
| CoolFET™                             | FASTr™              | MicroFET™          | PowerTrench®        | SuperSOT™-6     |
| CROSSVOLT™                           | FRFET™              | MicroPak™          | QFET™               | SuperSOT™-8     |
| DOME™                                | GlobalOptoisolator™ | MICROWIRE™         | QS™                 | SyncFET™        |
| EcoSPARK™                            | GTO™                | MSX™               | QT Optoelectronics™ | TinyLogic™      |
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| EnSigna™                             | I <sup>2</sup> C™   | OCX™               | RapidConfigure™     | UHC™            |
| Across the board. Around the world.™ |                     | OCXPro™            | RapidConnect™       | UltraFET®       |
| The Power Franchise™                 |                     | OPTOLOGIC®         | SILENT SWITCHER®    | VCX™            |
| Programmable Active Droop™           |                     | OPTOPLANAR™        | SMART START™        |                 |

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